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Assessing the Costs of Terrorism

by Peter Navarro and Aron Spencer

How much will the worst terrorist attack in history cost America? The answer will surely be in the range of hundreds of billions of dollars – and could well hurdle into the *trillions*.

While this article does offer preliminary estimates of the direct and indirect costs of the attack, pinning down the numbers is just one reason – and not the most important reason – to make the reckoning. For the ultimate impact of the tragedy of September 11 depends on policy choices that have yet to be made. Such choices range from the nature of the military response, the methods used to increase domestic security, as well as the means used to compensate the families, industries and localities affected.

Arguably the most critical choices, though, will be the ones that affect the economy as a whole – in particular, government fiscal and monetary policy, and potential instability in world energy markets. For while a proper accounting of the short run costs of the attack

EXHIBIT 1: COST CATEGORIES FOR TERRORIST ATTACKS

THE IMMEDIATE AFTERMATH

- Property damage
- Loss of human life and injuries
- Lost economic output
- Reduction in stock market wealth
- Psychological impacts of terrorism

LONGER TERM MICROECONOMIC EFFECTS OF A "TERRORISM TAX"

- Increased airline security
- Other security measures

SECTOR-SPECIFIC IMPACTS

- Advertising
- Airlines
- Insurance
- Hotel and tourism

GOVERNMENT BAILOUTS AND BUDGETARY IMPACTS

- The airlines
- New York City
- Reduced federal, state and local tax revenues

THE HIGHER OIL PRICES-WEAKER DOLLAR CONUNDRUM

- Effects of an oil price shock
- Costs of a weaker dollar
- Destabilization of the stock market and international monetary system

MACROECONOMIC COSTS

- A deeper recession
- A more volatile business cycle
- A lower long-term growth path and economic stagnation

yield mind-numbingly large figures, the damage promulgated through inflation, unemployment and lower productivity could dwarf the numbers linked to loss of property and life. Indeed, if the President, the Federal Reserve and Congress make imprudent policy choices, we may wind up on a slower growth track, with attendant hardships for tens of millions of Americans.

Exhibit 1 summarizes the broad categories of costs examined here. These range from property damage, to an economist's accounting for the loss of human life, to the aforementioned long-term drag on productivity and growth.

PROPERTY DAMAGE

It will be months before a full accounting of the property destroyed or damaged by terrorists on September 11, 2001 is possible. Exhibit 2 provides a preliminary reckoning, based on a combination of published reports and constrained guesswork.

The big-ticket items include the loss of four civilian aircraft valued at $385 million, the destruction of major buildings in the World Trade Center with a replacement cost of from $3 billion to $4.5 billion, damage to a portion of the Pentagon that will cost up to $1 billion to fix, and cleanup of the hundreds of thousands of tons of rubble at the crash sites for another $1.3 billion.

In addition, New York's World Financial Center, 30 West Broadway, 22 Cortlandt Street, the Bankers Trust building, and 30 West Street suffered severe, but repairable, damage. Estimates of the cost of repair to these buildings are not yet available.

The terrorist attack took a very heavy toll on public works and infrastructure. Fire trucks, ambulances and police cars with an approximate value of $35 million were lost in the destruction. Streets were damaged, as were public utilities and subway infrastructure. We estimate the loss in the range of $2 billion.

Finally, 120,000 workspaces were destroyed. TowerGroup Technology estimates

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computer hardware losses at $1.7 billion, with software/network losses at $1.5 billion.

LOSS OF HUMAN LIFE

The terrorist attacks claimed upward of 6,000 lives, in total. Some 266 innocent lives were lost on the four downed aircraft. An additional 125 are dead in the Pentagon. The New York City toll is listed at more than 5,000 missing or confirmed dead.

In the most profound sense, there is no way to translate life in dollars. If you ask people how much they would pay to avoid a fatal accident today, the typical answer is everything they have.

Still, people don't behave as if their lives are infinitely valuable: they drive cars, use dangerous tools, sleep in houses without sprinkler systems, and engage in myriad other activities that increase the risk of premature death in return for pleasure or income or savings. And economists infer value to life by multiplying the financial gains associated with bearing marginally greater risk by the probability of fatality associated with the risk.

Consider two crude examples. If a construction worker is willing to accept a 1 percent chance of a fatal accident over his working life in return for $50,000 more lifetime pay, he is implicitly valuing his own life at $5 million ($50,000 divided by .01). If a homeowner refuses to install a carbon monoxide detector that costs $30 near her gas heater, thereby increasing the risk of dying by one chance in 10,000, it implies that she values her life at no more than $3 million ($30 divided by .0001).

Estimates based on a variety of risk-taking/risk-avoiding activities generate remarkably consistent numbers. Kip Viscusi of Harvard puts the value of human life at between $3 million and $7 million – numbers that are now used by the federal government in deciding whether to mandate additional safety

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EXHIBIT 2: PROPERTY DAMAGE FROM TERRORIST ATTACKS

	COST
MAJOR BUILDINGS	
Buildings destroyed in World Trade Center complex	$3.0 billion to $4.5 billion
Pentagon damage	$250 million to $1 billion
Cleanup of rubble from crash sites	$1.3 billion
AIRCRAFT	
Four passenger jets	$385 million
PUBLIC WORKS AND INFRASTRUCTURE	
Fire trucks, ambulances, police cars	$35 million
Infrastructure such as streets, sewer, utility lines and subways	$2 billion
CORPORATE PROPERTY	
Office equipment and software	$3.2 billion
TOTAL	$10 billion to $13 billion

equipment in commercial aircraft. Not surprisingly, the value that people implicitly place on their own lives rises with income and education.

Assuming most of those lost in New York will fall at the higher end of the education and income scales, and that there is considerable collateral damage to their families in the form of emotional pain and income loss that is not included in how people value their own lives, the 6,000-plus death toll translates into an economic cost in the range of $40 billion.

LOST ECONOMIC OUTPUT IN THE IMMEDIATE AFTERMATH

Exhibit 3 (page 22) offers estimates for the major categories of lost economic output.

In response to the crisis, the entire air

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transportation network was shut down for two-and-a-half days at a cost of almost $1.5 billion in lost airfares and cargo-shipping revenues. Federal Express lost $100 million in just 48 hours and presumably other courier services such as UPS lost tens of millions as well. Numerous small aviation enterprises, from crop dusters to traffic helicopter services, likewise sustained significant losses. In addition, the major carriers are projected to lose another $3.4 billion to reduced demand by the end of September, for a total approaching $5 billion.

The hotel industry suffered numerous room cancellations, at a loss in revenues of $700 million. Television and radio stations running commercial-free coverage lost roughly $1 billion in foregone advertising revenues

EXHIBIT 3: LOST ECONOMIC OUTPUT IN THE IMMEDIATE AFTERMATH

CATEGORY	LOSS
Lost airline and cargo shipping revenues, September 2001	$4.7 billion
Lost hotel industry revenues through first weekend of crisis	$700 million
Lost advertising revenues in television and radio during commercial-free coverage in the first days	$1 billion
Two-day partial work stoppage and loss of productivity	$35 billion
Lost consumer spending and retail sales	$6 billion
TOTAL	$47 billion

EXHIBIT 4: LOSS OF STOCK MARKET WEALTH

	DROP IN INDEX AS OF SEPTEMBER 21	LOSS IN MARKET CAPITALIZATION
NYSE (U.S.)	-11.24%	-$1.3 trillion
Nasdaq (U.S.)	-16.05%	-$407 billion
Amex (U.S.)	-8.01%	-$8.5 billion

in a matter of days. Newspapers suffered a double squeeze of increasing the pages of coverage while dramatically decreasing ad space; magazines were also hard hit.

Golf tournaments, baseball games, college and professional football games, and numerous other sporting and entertainment events were cancelled or postponed. We can only guess at these impacts, though surely the loss exceeds $100 million.

A two-day partial work stoppage and attendant loss of productivity, as the nation adjusted to the shock, likely cost another $35 billion. Consumer spending fell by a reported 20 percent in smaller cities and 50 percent in larger ones in the two days following the attack, for a loss of retail sales around $6 billion.

We acknowledge that these numbers must be taken with a healthy dose of skepticism. Gross revenues lost by retailers, for example, are surely larger than the opportunity cost of the labor and capital services that would have been used to produce the revenues. And, in any event, there is clearly an element of double-counting in adding the market value of the labor lost to the retail value of the goods and services not sold.

On the other hand, there is an element of undercounting here, too. The market value of goods and services not sold represents a lower bound on their value to consumers – a day at Disneyland may be worth $500, even though the price of admission and assorted souvenirs is just $100. We reiterate: the point of this admittedly rough exercise in social accounting is to put the losses in useful context.

SHORT RUN REDUCTION IN STOCK MARKET WEALTH

Exhibit 4 lists the percentage drop in the major U.S. stock market indices and loss of market capitalization from the close of the markets on Monday, September 10 to Friday, September 21 – the end of the first week of trading after the attack.

The New York Stock Exchange and the Nasdaq, which list the lion's share of large, publicly traded corporations, suffered double-digit drops. This translates into a total loss of stockholder wealth, as measured by the reduction in market capitalization, of a staggering $1.7 trillion.

In addition, shareholders in other major markets around the world likewise suffered substantial losses as of September 21. These foreign exchanges fell from a minimum of 6.3 percent for the Nikkei to well over 10 percent for all of the major European exchanges, with the German exchange falling by almost 20 percent.

Is the drop in the market value a measure of cost? In one sense, it may be the best single

measure of the losses to the owners of capital linked to the physical damage, the expected decline in corporate profits associated with macroeconomic instability and – most elusive – the greater risk premium investors now attach to the ownership of equity.

Again, though, we acknowledge the element of double-counting: you can't legitimately add lost revenues to the airline or hotel business to the decline in the market capitalization of the two industries. But measuring the decline in stock values is surely worth doing since it gives some sense of how much damage investors believe has been done to their future claims on corporate income.

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PSYCHOLOGICAL IMPACTS OF TERRORISM

The worst terrorist attack in American history exacted a grave emotional cost to Americans who were not directly affected. This terror, and the attendant perceived loss of freedom to travel and work without terrorism's risks, imposes a heavy psychological impact – precisely as it was intended.

The question, of course, is how we might put a value on these intangible costs. One way would be to apply what economists call "contingent valuation" (CV) analysis. CV analysis uses survey methods to assess the willingness of people to pay for goods not regularly traded in the marketplace. Such "non-market goods" include cleaner air and water, a reduction in nuclear power plant radiation risk, and broader public safety concerns. Thus, in the wake of the Exxon Valdez oil spill, the State of Alaska commissioned a survey in which Americans were asked how much money they would have been willing to pay collectively to undo the damage. The (very controversial) answer: $3 billion.

In this particular case, the question is: How much would we pay to be able to fly (or work in large office buildings, or drink the water from public reservoirs) without fear?

The emotional cost of the attack on the World Trade Center surely dwarfs that associated with thinking about all those dead birds and oil-drenched sea otters in Alaska. But by what order of magnitude? Hypothetically, if each of the 100 million American households

not living in poverty would give up a mere $1,000 to be able to forget that Osama Bin Laden and his ilk walk the earth, the emotional damage must be equivalent to at least $100 billion.

MICROECONOMIC IMPLICATIONS OF THE TERRORIST TAX AND DEFENSIVE BEHAVIOR

Rachael Carson's *Silent Spring*, released in 1962, marked an important turning point in public awareness about the dangers of environmental pollution. The result was the birth not only of a new government bureaucracy – the Environmental Protection Agency – but also a plethora of new government regulations. While these regulations had the salutary effect of cleaning up the nation's air and water resources, they also imposed a burden on the nation's productive capacity. Indeed, we would argue that the new regulation turned out to be just one of a number of supply-side shocks to the economy that created irreconcilable conflicts between Americans' expectations of rising living standards and the reality of reduced productivity growth in the 1970s – conflicts that led to "cost-push" stagflation of the era.

The September 11 terrorist attacks promise to give rise to a comparable regulatory response that creates a drag on productivity. The important lesson here from the 1970s is that brute-force responses to real problems can lead to great harm. It took the environmental bureaucracy many years to shift from unnecessarily expensive "command and control" systems of pollution abatement to more highly targeted and economically efficient methods. Will the nation again waste vast sums in the pursuit of legitimate public goals?

America faces two different kinds of terrorist threats to civil aviation. The first is the "Lockerbie problem" – the destruction of aircraft by bombs. The second is the hijack of aircraft for use as weapons of mass destruction or, as in the past, as collateral for ransom. At present there are a number of policy options on the table to address these problems – all of which potentially impose very high costs. These options, and their microeconomic impacts, are summarized in Exhibit 5.

EXHIBIT 5: THE MICROECONOMIC COSTS OF "TERRORIST TAX"

	COST
Sky marshals	Up to $6 billion per year
Government takeover of airport security	$1 billion per year
Retrofitting of aircraft with anti-terrorist devices	$450 million
New technology "fixes"	$2 billion per year
Increased airport delays	$8 to $32 billion per year
TOTAL (FIRST YEAR)	Up to $41 billion

One option is to post sky marshals on every plane flying in the U.S. At present, the U.S. government employs 500 sky marshals. Simply doubling the sky marshal force would cost roughly $100 million. At the other end of the spectrum, we could put two such marshals on every plane flying in the U.S. This would require some 40,000 additional marshals. It would also lead to the creation of a bureaucracy many times the size of the FBI. The annual cost would be roughly $6 billion.

A second proposal is to replace private airport security with a government force, one presumably managed by the same bureaucracy as the sky marshals. The implicit rationale for this reverse privatization is that it is very difficult to create an incentive structure for private security forces that leads to optimal levels of security delivered at least cost.

Government employees, the argument goes, would be paid far more than the rent-a-

guards who now screen passengers, and it would thus be easy to recruit more qualified employees. Assuming the current force of roughly 18,000 guards was increased to 25,000 and that the average salary was increased from approximately $15,000 a year, the wage bill alone would rise by $600 million annually. With additional overhead of a government security force, the net cost increase would surely approach $1 billion annually.

A third policy option is to retrofit every plane with a reinforced cockpit door and to require all new planes to adopt the Israeli configuration of two reinforced doors to the cockpit. The retrofits alone would likely cost $50,000 per plane, for a total of roughly $450 million.

U.S. regulators will no doubt also look at more sophisticated new technology fixes. These range from the use of computers to take control of flights seized by terrorists to more sophisticated 3D baggage scanners, face-recognition systems, and biometric identity devices, such as retinal and fingerprint scanners. Equipping the nation's roughly 9,000 commercial aircraft and 50 largest airports with an array of these technologies could cost as much as $2 billion.

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Big numbers? Perhaps. But even the upper-bound numbers work out to just $20 to $25 a ticket. Moreover, if these measures were sufficient to restore enough confidence in the American public so that airline travel reached its previous levels, the cost per ticket could fall below $20.

The real worry is that the intangible costs associated with increased airport security will be ignored and, as a result, too little attention will be paid to passenger convenience,

permanently burdening the airline industry with unnecessary delays. Assume that airline traffic falls by the 20 percent now projected by the airline industry. This would reduce the number of annual passenger trips in the United States to 525 million. If each traveler must arrive 90 minutes earlier, as recommended by the FAA, the cost in additional travel time would be 788 million hours.

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What value should we put on that time? Surveys and behavioral-based studies suggest people place a value of about $10 per hour on time spent in their cars, while studies of air travel put the cost at two to four times that much because air travelers have higher average incomes. Accordingly, we estimate the value of the 788 million hours lost to be somewhere between $16 billion annually (valuing time at $20 an hour) and $32 billion annually (valuing time at $40 an hour).

Note, at this point, that we have only considered the costs of increased security for our nation's airports. In fact, there will be considerable expenditures by federal, state and local governments as well as by private corporations to beef up security at national monuments, government buildings, nuclear power plants, water treatment plants, sports stadiums, high-rise office buildings, concert halls and any place where large numbers of people gather and are vulnerable to a terrorist attack. No estimates for these efforts are presented here, but the increase is likely to run into the billions – and many times more if security procedures waste work and recreation time.

LONGER TERM SECTOR-SPECIFIC COSTS

The four sectors likely to bear a large brunt of the attack will be the advertising, airline, insurance and hotel/tourism industries. Of the four, only the insurance industry apparently has the resources to ride out the storm without great dislocation.

As noted earlier, advertising-based media

lost as much as a billion dollars in revenues within just a few days of the attack. More broadly, industry analysts now project a 6.6 percent decrease in ad revenues for the remainder of 2001 and a 7.4 percent drop during 2002. Taking into account that part of these decreases were due to recessionary conditions prior to the attack, we value the net drop at about $5 billion.

The airline industry is projecting a 20 percent reduction in demand beginning in the fourth-quarter 2001. This translates into a loss of just under $20 billion in the industry's contribution to the gross domestic product on an annual basis. It is unclear when demand may resume its growth, or whether the labor and capital freed by this industry shrinkage can be productively used elsewhere in the foreseeable future. Much will depend on the course of events and the policies adopted for improved airline security.

Similarly, the hotel and tourism industries are hunkering down for a projected 20 percent decline in demand through fourth-quarter 2000 at a revenue loss of $5.5 billion. This is on top of the $700 million lost in the four days following the attack.

Longer term, demand for hotel rooms is projected to drop in 2002 from its pre-attack levels at a rate between an optimistic 3 percent decline to a more pessimistic 10 percent decline. This translates into an additional $3 billion to $11 billion in lost revenues.

In addition, the effects will ripple downstream to the construction industry, as fewer of these facilities will be built. In the worst-case scenario, virtually all large hotel projects will be put on hold for several years at a cost in foregone construction revenues of about $12 billion. Again, it is unclear what portion of the labor and capital freed could be productively used in other industries.

Turning to the insurance industry, the terrorist attacks only accelerate a trend: insured catastrophic losses have been rising dramatically over the past several decades. Exhibit 6 summarizes some of those insured losses (adjusted for inflation) for catastrophes ranging from earthquakes and riots to hurricanes and terrorist bombings.

EXHIBIT 6: INSURED LOSSES FROM OTHER DISASTERS

CATASTROPHE	INSURED LOSSES
1989 Hurricane Hugo	$5 billion
1992 Los Angeles riots	$844 million
1992 Hurricane Andrew	$16.9 billion
1993 World Trade Center bombing	$542 million
1994 Northridge, California earthquake	$13 billion
1995 Oklahoma City bombing	$127 million

Note that two major hurricanes – Andrew and Hugo – resulted in losses of well over $20 billion, while the previous World Trade Center bombing generated claims of $542 million and the Oklahoma City bombing generated claims of $127 million. Hurricane Andrew did force some insurance companies into bankruptcy. But that was the exception; the industry tends to pool its vast resources through reinsurance schemes.

Congress has limited the liability of the airlines (and their insurers) in the events of September 11. The airlines' liability has capped at the level of insurance at the time of the attacks – $1.5 billion per airline for American and United, with a $500 million deductible each.

In addition, these companies would be responsible only for the deaths of passengers. With the death count on board at 266, this amounts to roughly $11 million per life lost, with the airline companies responsible for the first $1 billion of the payouts.

For persons killed on the ground, analysts estimate that an average of $500,000 will be awarded to the families of each of the victims.

The actual amount per family will vary greatly. We estimate that the total bill for lives lost on the ground is somewhere on the order of $3.25 billion.

Someone must pay for expected changes in future risk. If premiums on business insurance of all types rise by an average of 5 percent, America's annual insurance bill will rise by $8 billion. Of course, if claims don't rise accordingly, the $8 billion represents a transfer of income to the insurance industry – not a real cost to the economy.

GOVERNMENT BAILOUTS AND LOST TAX REVENUES

Congress has approved a bailout of $18 billion for the airlines. Of that, $5 billion is in cash subsidies, $10 billion is loan guarantees, and $3 billion is in aid for increased security costs. Since loan guarantees represent modest costs to the government – the difference between the cost of capital to Uncle Sam and the cost of capital to the industry – we limit our analysis to the other items.

The City of New York will surely receive massive aid from the federal government. At the time of this writing, there were no reliable estimates of the size of the aid package – Gov. Pataki is asking for $54 billion – but it will certainly run into the billions.

On the other side of the ledger, federal, state and local tax revenues will all drop by a substantial amount. For the federal and state governments, this will come in the form of reduced corporate-tax receipts both from corporations operating in the affected sectors and, more broadly, through the recessionary effects that will be discussed further below. As an example of the many and varied ways the September 11 attacks will ripple through the budget, we are likely to see an extraordinary rise in deductible charitable contributions. This will, in turn, lower federal and state tax receipts.

For local governments, the reduction in hotel-room demand will result in an appreciable drop in hotel-room taxes, which average about 12 percent of the room rate. Such taxes constitute a significant fraction of local government revenues, particularly in major tourist destination cities like Boston, San Francisco, San Diego, Seattle and Miami. We estimate that the projected 3 percent to 10 percent drop in hotel room demand in 2002 will result in the loss of $400 million to $1.3 billion in such local tax revenues.

Note that, as a first approximation, government transfers and reduced tax revenues represent no net economic losses; they are matched, dollar for dollar, by reduced liabilities to the individuals, corporations and localities affected by the terrorist attacks. But looking closely, there are bound to be real (if difficult to measure) losses associated with the transfers. For example, the value of the services that a local government cuts – say garbage collection or after-school programs – will probably exceed the monetary gains to the tourists who have cancelled their trips and thus don't pay the tax.

THE HIGHER OIL PRICE – WEAKER DOLLAR CONUNDRUM

Oil prices spiked after the terrorist attacks on fears of war in the Middle East. Within days, however, prices fell to levels below the attack level because of offsetting concerns about recession and a weakening demand for oil.

As of this writing, it remains to be seen whether oil prices will again spike in the wake of military action in Afghanistan or elsewhere. While a military strike or sabotage might disrupt the oil flow, the greater risk is a collapse of cooperation with Persian Gulf oil producers that leads to production cutbacks

like those experienced in the 1970s.

Such an embargo would likely be organized by oil-exporting countries, like Iraq, Iran and Libya, that are hostile to America. However, any successful oil embargo would probably require the cooperation of the Middle East's largest oil producer, Saudi Arabia. The Saudis account for half of the oil production from the Mideast. More relevant, they have the production capacity to offset any reduced output elsewhere in the region.

At the time of this writing, it is impossible to predict how events will unfold. Let us simply note that for every dollar increase in the price of a barrel of oil, America's oil import bill rises annually by roughly $3.4 billion. Moreover, higher oil prices ripple pervasively through the economy as American energy producers raise their prices and energy-intensive sectors – from aluminum to plastics – face higher production costs. If government copes as badly with the resulting dislocations as it did in the 1970s, the real cost would be many times greater than the transfers to energy producers.

The terrorist attack has, at least initially, also weakened the exchange value of the dollar. While the root cause is difficult to determine, foreigners fearing war and instability may be pulling their money out of U.S. financial markets. As investors redeem dollar-denominated assets, they exchange dollars for yen, francs or Saudi riyals, and the value of the dollar falls through the laws of supply and demand. Add to this the impact of rising oil prices. More dollars are required to buy the same amount of imported oil, and more dollars spent abroad likewise mean downward pressure on the dollar.

A weaker dollar does have the benefit of stimulating our export industries, offsetting some of the macroeconomic weakening linked to the terrorist attacks. However, it also is inflationary because it raises the cost of imports. A 10 percent drop in the value of the dollar would raise our import bill by roughly $140 billion.

There is a broader problem here, however,

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than simply a rising import bill. A weakening dollar that increases inflationary expectations would severely constrain the ability of the Federal Reserve to use expansionary monetary policies to fight recession. Moreover, a weaker dollar undermines the economies of our global trading partners as America imports fewer goods. The export-oriented economies of Asia – most notably Japan – are particularly vulnerable. That's why Tokyo tried – unsuccessfully – to prop up the dollar in the days after the attack.

In this regard, there is a much larger concern raised by the intricate relationship between rising oil prices and a weakening dollar. Consider this hypothetical chain reaction: a military response against the terrorists alienates oil producers; an OPEC boycott or other supply disruption raises oil prices; soaring oil prices drive down the dollar; a falling dollar creates domestic inflationary pressure; the fear of inflation constrains the Fed from further action; Fed immobility results in a drain of foreign dollars from the stock market; the departure of foreign investors drives down the stock market; the decline of markets creates a negative wealth effect that pushes the domestic economy over the edge to depression. This depression spreads globally first to Asia as a weakening dollar dramatically cuts Asian exports to the U.S. and then to Europe as the combined reduction in demand from the U.S. and Asia completely undermine the European economy.

Not plausible, you say, because policymakers have learned their lessons from the first two oil crises? You are probably right. Still...

MACROENOMIC COSTS

Will the worst terrorist attack in history be recessionary or inflationary – or both? How will the attack affect the volatility of the business cycle and more importantly, long-run prospects for economic growth? In thinking about these questions, it is useful to examine the four key macroeconomic variables in Exhibit 7 for the very good times of 1993 to 2000 and the very bad times of 1974 to 1982.

EXHIBIT 7: KEY MACROECONOMIC VARIABLES IN BAD TIMES AND GOOD

	1974-1982	1993-2000
Growth	1.98%	4.04%
Inflation	7.84%	1.85%
Unemploment	7.24%	4.96%
Non-farm productivity	0.88%	2.14%

From 1993 to 2000, the U.S. economy demonstrated its full potential in a world of stable prices, reduced demand for military goods and services, and the rapid diffusion of exciting new technologies. Comparing this period to 1974-82, we can see that productivity growth was substantially higher – 2.14 percent versus 0.88 percent. Inflation was virtually nonexistent – 1.85 percent versus 7.84 percent. The unemployment rate was remarkably low – less than 5 percent compared to more than 7 percent. By no coincidence, the economy grew, in real terms, twice as rapidly as in the 1974-82 period – and half a percent higher than the historical average of 3.5 percent.

The very bad times of 1974-82 were initiated by a war and an over-expansionary fiscal policy in the 1960s, and compounded by supply-side shocks in the early 1970s. Moreover, the Federal Reserve added to the dislocation by gyrating between contractionary and expansionary measures. These factors led to a growth rate a full percent lower than the average of the previous 50 years.

The risk today is that we are witnessing the beginning of a similar series of destabilizing actions and reactions that could undermine

the business climate and push the U.S. economy back into a 1970s-style era of stagflation and hard times. This need not be the case. Nonetheless, there is at least one plausible nightmare scenario, which does not turn on the aforementioned possibility of an oil crisis.

In stage one of that scenario, which plays out over the next several quarters, the macroeconomic shocks of the attacks – lost production in the immediate aftermath of the attacks, plunging consumer confidence and a sharp drop in retail sales, a dramatic reduction in business investment, a negative "wealth effect" from a declining stock market, and so on – all conspire to push the U.S. economy into a deep recession. During this stage, the Federal Reserve responds with an expansionary monetary policy, while the Federal government engages in a variety of actions that effectively serve as a very strong dose of expansionary fiscal policies – the bailout of the airlines, aid to New York City, increased defense expenditures.

Collectively, this sharp dose of expansionary fiscal and monetary policies pulls the economy out of the recession at a rapid pace – a pace that sets the stage for increased inflationary pressures. Within a year or two, the economy overheats in much the same way it did in the late 1960s during the Vietnam War. At the same time, massive expenditures on increased domestic security create additional cost-push pressures in much the same way the new environmental and workplace regulation did in the 1970s.

The stagflation of the 1970s was, in essence, purged by draconian changes in monetary policy in 1980-81 that triggered a brief but very harsh recession and by a changing regulatory climate under President Reagan that sharply increased business investment. If we are once again caught in doleful 1970s-like circumstances, there is no guarantee that the nation could summon the political will to snap back. And without it, the long-term capacity of the economy to grow could be reduced sharply. Imagine, for example, that instead of growing at an average of 3.5 percent annually for the next decade (a half a percentage point less than in the 1994-2000 period), the economy only managed to grow at 2.0 percent – as in the 1970s. Instead of a real GDP of $14.4 trillion in 2011 (in 2001 dollars), GDP would only reach $12.4 trillion – a difference of *$2 trillion*!

THE FINAL RECKONING

We've attempted a preliminary assessment of the costs of the worst terrorist attack in history. Counting the value of lives lost as well as property damage and production of goods and services forgone, the United States has already suffered losses exceeding $100 billion. Including the loss in stock market wealth – the market's own estimate arising from expectations of lower corporate profits and higher discount rates for economic volatility – the price tag approaches $2 trillion.

The more important conclusion from this article, however, is that the full picture has yet to be painted. The ultimate economic cost of the tragedy will turn on how successfully policymakers cope with new challenges. On one level, they risk investing too little in resources that could minimize the intangible (but very costly) inconveniences associated with the need for increased security. On quite another level, they must deal with the potential for increased volatility in the business cycle that could reduce the economy's growth potential. The stakes here are simply breathtaking – failure to prevent 1970s-style stagflation could reduce the GDP by trillions annually.

Indeed, if Washington overreacts to this crisis or makes imprudent policy choices, the terrorists will have won their heinous war. M